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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/070,255

DATE: 12/16/2002

TIME: 14:10:08

Input Set : A:\Sequence listing.txt

Output Set: N:\CRF4\12162002\J070255.raw

3 <110> APPLICANT: WALLACH, David  
 4 MALININ, Nikolay  
 5 SINHA, Indranil  
 6 LEU, Stefan  
 8 <120> TITLE OF INVENTION: IREN PROTEIN, ITS PREPARATION AND USE  
 10 <130> FILE REFERENCE: WALLACH=28  
 12 <140> CURRENT APPLICATION NUMBER: US 10/070,255  
 C--> 13 <141> **CURRENT FILING DATE: 2002-12-16**  
 15 <150> PRIOR APPLICATION NUMBER: PCT/IL00/00517  
 16 <151> PRIOR FILING DATE: 2000-08-31  
 18 <150> PRIOR APPLICATION NUMBER: IL 131719  
 19 <151> PRIOR FILING DATE: 1999-09-02  
 21 <160> NUMBER OF SEQ ID NOS: 14  
 23 <170> SOFTWARE: PatentIn version 3.1  
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 26 <211> LENGTH: 30  
 27 <212> TYPE: DNA  
 28 <213> ORGANISM: Artificial sequence  
 30 <220> FEATURE:  
 31 <223> OTHER INFORMATION: synthetic  
 33 <400> SEQUENCE: 1  
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 38 <211> LENGTH: 32  
 39 <212> TYPE: DNA  
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 42 <220> FEATURE:  
 43 <223> OTHER INFORMATION: synthetic  
 45 <400> SEQUENCE: 2  
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 51 <212> TYPE: DNA  
 52 <213> ORGANISM: Homo sapiens  
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 59 gcaccggccc ggggagaggc acc 143  
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 63 <211> LENGTH: 1782  
 64 <212> TYPE: DNA  
 65 <213> ORGANISM: Homo sapiens  
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72 agggtcacct gtctgtgtgc ccagtttgaa gccgtcctgc agcatggctt gaagaggagt      180
74 cgaggattgg cactcacagc ggcagcgatc aagcaggcag cgggctttgc cagcaaaacc      240
76 gaaacagagc ccgtgttctg gtactacgtg aaggagggtcc tcaacaagca cgagctgcag      300
78 cgcttctact cctgcgcca catcgctca gacgtgggcc ggggtcgcgc ctggctgcgc      360
80 tgtgccctca acgaacactc cctggagcgc tacctgcaca tgctcctggc cgaccgctgc      420
82 aggctgagca ctttttatga agactggtct tttgtgatgg atgaagaaag gtccagtatg      480
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86 gatttgaacg ggcagagtaa gtttgctccc accgtttcag acctcttaaa ggagtcaacg      600
88 cagaacgtga cctccttgct gaaggagtcc acgcaaggag tgagcagcct gttcagggag      660
90 atcacagcct cctctgccgt ctccatcctc atcaaacctg aacaggagac cgacccttg      720
92 cctgtcgtgt ccaggaatgt cagtgtgat gccaaatgca aaaaggagcg gaagaagaaa      780
94 aagaaagtga ccaacataat ctcatattgat gatgaggaag atgagcagaa ctctggggac      840
96 gtgtttaaaa agacacctgg ggcaggggag agctcagagg acaactccga ccgtcctct      900
98 gtcaatatca tgtccgcctt tgaaagcccc ttcgggcta actccaatgg aagtcagagc      960
100 agcaactcat ggaaaattga ttccctgtct ttgaacgggg agtttgggta ccagaagctt     1020
102 gatgtgaaaa gcatcgatga tgaagatgtg gatgaaaacg aagatgacgt gtatggaaac     1080
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120 gagcggcagg gcatgaaggt ccaggcgctg gccagctatc tttgctatct tgtgaggaga     1620
122 ttctaaccac acgtgagaac catgtggtgg agaaatggag ggagagagaa atccaacagt     1680
124 tcctgatagt ctcatattgag ctccctggatc cagtctttcc tgaagctgtg tttcctctgg     1740
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130 <211> LENGTH: 3139
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132 <213> ORGANISM: Homo sapiens
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139 agggtcacct gtctgtgtgc ccagtttgaa gccgtcctgc agcatggctt gaagaggagt      180
141 cgaggattgg cactcacagc ggcagcgatc aagcaggcag cgggctttgc cagcaaaacc      240
143 gaaacagagc ccgtgttctg gtactacgtg aaggagggtcc tcaacaagca cgagctgcag      300
145 cgcttctact cctgcgcca catcgctca gacgtgggcc ggggtcgcgc ctggctgcgc      360
147 tgtgccctca acgaacactc cctggagcgc tacctgcaca tgctcctggc cgaccgctgc      420
149 aggctgagca ctttttatga agactggtct tttgtgatgg atgaagaaag gtccagtatg      480
151 ctccctacca tggcagcagg tctgaactcc atactctttg cgattaacat cgacaacaag      540
153 gatttgaacg ggcagagtaa gtttgctccc accgtttcag acctcttaaa ggagtcaacg      600
155 cagaacgtga cctccttgct gaaggagtcc acgcaaggag tgagcagcct gttcagggag      660
157 atcacagcct cctctgccgt ctccatcctc atcaaacctg aacaggagac cgacccttg      720
159 cctgtcgtgt ccaggaatgt cagtgtgat gccaaatgca aaaaggagcg gaagaagaaa      780
161 aagaaagtga ccaacataat ctcatattgat gatgaggaag atgagcagaa ctctggggac      840

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|     |                              |             |            |             |             |             |      |
|-----|------------------------------|-------------|------------|-------------|-------------|-------------|------|
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| 165 | gtcaatatca                   | tgtccgcctt  | tgaaagcccc | ttcgggccta  | actccaatgg  | aagtcagagc  | 960  |
| 167 | agcaactcat                   | ggaaaattga  | ttccctgtct | ttgaacgggg  | agtttgggta  | ccagaagctt  | 1020 |
| 169 | gatgtgaaaa                   | gcatcgatga  | tgaagatgtg | gatgaaaacg  | aagatgacgt  | gtatggaaac  | 1080 |
| 171 | tcatcaggaa                   | ggaagcacag  | gggccactcg | gagtcgcccc  | agaagccact  | ggaaggggaa  | 1140 |
| 173 | acctgcctct                   | cccagatgca  | cagctgggct | ccgctgaagg  | tgctgcacaa  | tgactccgac  | 1200 |
| 175 | atcctcttcc                   | ctgtcagttg  | cgtgggctcc | tacagcccag  | cagatgcccc  | cctcgggaag  | 1260 |
| 177 | ctggagaacg                   | ggacaggacc  | agaggaccac | gttctcccgg  | atcctggact  | tcggtacagt  | 1320 |
| 179 | gtggaagcca                   | gctctccagg  | ccacggaagt | cctctgagca  | gcctgttacc  | ttctgcctca  | 1380 |
| 181 | gtgccagagt                   | ccatgacaat  | tagtgaactg | cgccaggcca  | ctgtggccat  | gatgaacagg  | 1440 |
| 183 | aaggatgagc                   | tggaggagga  | gaacagatca | ctgcgaaacc  | tgctcgacgg  | tgagatggag  | 1500 |
| 185 | cactcagccg                   | cgctccggca  | agaggtggac | accttgaaaa  | ggaaggtggc  | tgaacaggag  | 1560 |
| 187 | gagcggcagg                   | gcatgaaggt  | ccaggcgctg | gccagagaga  | acgaggtgct  | caaagtccaa  | 1620 |
| 189 | ctgaagaaat                   | atgtaggagc  | tgtccagatg | ctgaaaagag  | aaggtcaaac  | agctgaagtg  | 1680 |
| 191 | ccaaatcttt                   | ggagtgttga  | tggagaagtt | acagtagctg  | aacagaagcc  | gggagaaatt  | 1740 |
| 193 | gctgaagaac                   | tcgcaagctc  | ctacgaaaga | aagctcatcg  | aggtggcaga  | gatgcatggc  | 1800 |
| 195 | gagctgattg                   | agttcaacga  | gcgcctgcac | agggccctgg  | tagccaagga  | agccctcgtg  | 1860 |
| 197 | tcccagatga                   | ggcaggagct  | catcgatctc | cggggaccgg  | tgcttgagga  | tttgagtcaa  | 1920 |
| 199 | acgtccgaag                   | accagagttt  | gtcggatttt | gaaatatcaa  | accgggcgct  | gatcaacgtc  | 1980 |
| 201 | tggatcccct                   | cagtgtttct  | ccggggcaaa | gcagcaaatt  | cattccacgt  | gtatcaggtc  | 2040 |
| 203 | tacatccgga                   | taaaagacga  | tgaatggaat | atttatcgcc  | ggtatacaga  | gttcaggagt  | 2100 |
| 205 | ttgcaccaca                   | agttacaaaa  | caagtaccct | caagtgaggg  | cctacaactt  | cccacccaaa  | 2160 |
| 207 | aaggccattg                   | gaaacaagga  | tgccaagttt | gtggaggaac  | ggagaaaagca | gctccagaat  | 2220 |
| 209 | tacctgcgca                   | gcgtcatgaa  | caaagtcatt | cagatggtcc  | ccgagttcgc  | tgccagcccc  | 2280 |
| 211 | aagaaggaga                   | ccctcatcca  | gctgatgccc | ttcttcgtcg  | acatcacccc  | gcccggagag  | 2340 |
| 213 | cctgtgaaca                   | gccggcccaa  | agcagcttcc | cgctttccca  | aactgtcccg  | gggtcagccc  | 2400 |
| 215 | cgggagaccc                   | gcaacgtgga  | gccccagagc | ggtgacctct  | gacctcgaca  | aaaccgcagc  | 2460 |
| 217 | cacggggccct                  | gtgcgtggca  | ccagctgcgt | ccaccccagc  | cactgccgct  | ggcccctcac  | 2520 |
| 219 | ctcagcgtga                   | caaccacgtc  | ccactggtga | tcttgagagc  | acacgattcc  | caacagttac  | 2580 |
| 221 | acaacacccc                   | gattaaacta  | atcagtcctc | gagccgcatg  | ataccgtgac  | ccgagagacc  | 2640 |
| 223 | aaggcagcac                   | ctcgtctggg  | agactgggac | acacagtcct  | tctgcttctg  | gggtctaccc  | 2700 |
| 225 | tgggctgcaa                   | gggctgttcc  | tccaccttcc | tatagttcag  | ggctggcagg  | aggggtgggca | 2760 |
| 227 | ccaggtcagg                   | ctgggtgcgc  | catggttgag | aggcaaaggt  | gatcccctat  | ataggaaggt  | 2820 |
| 229 | tcatgcagag                   | ccagcctctc  | cactctttcc | catgtgggga  | ctagaatgac  | tattagcctc  | 2880 |
| 231 | ttcctttgct                   | ttttaagggt  | attacctggc | ctaacctagg  | gatggctggc  | tgtggggggg  | 2940 |
| 233 | gggggtgggc                   | atgggttcct  | tactgcattt | ttccaccaac  | agtcattaga  | cacctggcac  | 3000 |
| 235 | tgtcacagct                   | cactttttcca | gagggatatt | cctgtggctt  | tggcaaggag  | ccattagtga  | 3060 |
| 237 | tgtgcaactt                   | gagttcagag  | aacttcccct | acctccccc   | tggctggctt  | caggaaaggac | 3120 |
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| 244 | <212> TYPE: DNA              |             |            |             |             |             |      |
| 245 | <213> ORGANISM: Homo sapiens |             |            |             |             |             |      |
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| 250 | gtgaaacagt                   | gccagatccg  | ctttggaggg | agaaaaggaga | ttgcctcgga  | ttccgacagc  | 120  |
| 252 | agggtcacct                   | gtctgtgtgc  | ccagtttgaa | gccgtcctgc  | agcatggctt  | gaagaggagt  | 180  |
| 254 | cgaggattgg                   | cactcacagc  | ggcagcgatc | aagcaggcag  | cgggctttgc  | cagcaaaacc  | 240  |
| 256 | gaaacagagc                   | ccgtgttctg  | gtactacgtg | aaggagggtcc | tcaacaagca  | cgagctgcag  | 300  |

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274 aagaaagtga ccaacataat ctcatattgat gatgaggaag atgagcagaa ctctggggac 840
276 gtgttttaaaa agacacctgg ggcaggggag agctcagagg acaactccga ccgctcctct 900
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282 gatgtgaaaa gcatcgatga tgaagatgtg gatgaaaaac aagatgacgt gtatggaaac 1080
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340 ttcaaaacga gaatttcagt gggagactgt ggcaaatgac acagtgttga cactggaatt 2820
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345 &lt;210&gt; SEQ ID NO: 7

346 &lt;211&gt; LENGTH: 541

347 &lt;212&gt; TYPE: PRT

348 &lt;213&gt; ORGANISM: Homo sapiens

350 &lt;400&gt; SEQUENCE: 7

352 Met Ser Gly Ser Gln Asn Asn Asp Lys Arg Gln Phe Leu Leu Glu Arg

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357          20          25          30
360 Glu Ile Ala Ser Asp Ser Asp Ser Arg Val Thr Cys Leu Cys Ala Gln
361          35          40          45
364 Phe Glu Ala Val Leu Gln His Gly Leu Lys Arg Ser Arg Gly Leu Ala
365          50          55          60
368 Leu Thr Ala Ala Ala Ile Lys Gln Ala Ala Gly Phe Ala Ser Lys Thr
369 65          70          75          80
372 Glu Thr Glu Pro Val Phe Trp Tyr Tyr Val Lys Glu Val Leu Asn Lys
373          85          90          95
376 His Glu Leu Gln Arg Phe Tyr Ser Leu Arg His Ile Ala Ser Asp Val
377          100          105          110
380 Gly Arg Gly Arg Ala Trp Leu Arg Cys Ala Leu Asn Glu His Ser Leu
381          115          120          125
384 Glu Arg Tyr Leu His Met Leu Leu Ala Asp Arg Cys Arg Leu Ser Thr
385          130          135          140
388 Phe Tyr Glu Asp Trp Ser Phe Val Met Asp Glu Glu Arg Ser Ser Met
389 145          150          155          160
392 Leu Pro Thr Met Ala Ala Gly Leu Asn Ser Ile Leu Phe Ala Ile Asn
393          165          170          175
396 Ile Asp Asn Lys Asp Leu Asn Gly Gln Ser Lys Phe Ala Pro Thr Val
397          180          185          190
400 Ser Asp Leu Leu Lys Glu Ser Thr Gln Asn Val Thr Ser Leu Leu Lys
401          195          200          205
404 Glu Ser Thr Gln Gly Val Ser Ser Leu Phe Arg Glu Ile Thr Ala Ser
405          210          215          220
408 Ser Ala Val Ser Ile Leu Ile Lys Pro Glu Gln Glu Thr Asp Pro Leu
409 225          230          235          240
412 Pro Val Val Ser Arg Asn Val Ser Ala Asp Ala Lys Cys Lys Lys Glu
413          245          250          255
416 Arg Lys Lys Lys Lys Lys Val Thr Asn Ile Ile Ser Phe Asp Asp Glu
417          260          265          270
420 Glu Asp Glu Gln Asn Ser Gly Asp Val Phe Lys Lys Thr Pro Gly Ala
421          275          280          285
424 Gly Glu Ser Ser Glu Asp Asn Ser Asp Arg Ser Ser Val Asn Ile Met
425          290          295          300
428 Ser Ala Phe Glu Ser Pro Phe Gly Pro Asn Ser Asn Gly Ser Gln Ser
429 305          310          315          320
432 Ser Asn Ser Trp Lys Ile Asp Ser Leu Ser Leu Asn Gly Glu Phe Gly
433          325          330          335
436 Tyr Gln Lys Leu Asp Val Lys Ser Ile Asp Asp Glu Asp Val Asp Glu
437          340          345          350
440 Asn Glu Asp Asp Val Tyr Gly Asn Ser Ser Gly Arg Lys His Arg Gly
441          355          360          365
444 His Ser Glu Ser Pro Glu Lys Pro Leu Glu Gly Asn Thr Cys Leu Ser
445          370          375          380
448 Gln Met His Ser Trp Ala Pro Leu Lys Val Leu His Asn Asp Ser Asp
449 385          390          395          400

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RAW SEQUENCE LISTING ERROR SUMMARY  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:12; N Pos. 9

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:14

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L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:944 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0